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EXAMINER

ADDIE, RAYMOND W

ART UNIT	PAPER NUMBER
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3671

DATE MAILED: 08/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/873,800

Applicant(s)

BARNAT ET AL.

Examiner

Raymond W. Addie

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 23 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-70 is/are pending in the application.
- 4a) Of the above claim(s) 26-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17, 21, 23-25, 38-55 and 60-70 is/are rejected.
- 7) ☐ Claim(s) 18-20, 22 and 53-55 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-25, 38-70 drawn to a roadway paving machine having separate storage and distribution features for aggregates and liquid, classified in class 404, subclass 82.
  - II. Claims 26-37, drawn to a supply truck, classified in class 404, subclass 108.

Inventions of Groups I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are related to a roadway paving machine for applying a binder and aggregate to a roadway surface. Whereas group II is related to a supply truck for supplying binder and aggregate to any construction machine. Further the invention of Group I can be used by itself in a batch paving application.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 60 recites the limitation "through the output hopper" in the last line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 60 only provide for an aggregate material dispensing system having a discharge port. There is no discussion of any hopper in claim 60 until the last 3 words of the claim. Therefore, the structural and functional relationships between the positively cited discharge port and the cited "output hopper" are unclear.

Does the recitation of an "output hopper" suggest there is an --input hopper--?

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 6, 7, 13-15, 23-25, 38, 42, 44-46, 60-63, 66, 67 are rejected under 35

U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bense et al. # 5,069,578.

Bense et al. discloses a roadway paving apparatus (1) for applying asphaltic binder material and aggregate to a ground surface comprising: A vehicle (1) having a plurality of wheels (2a-d), a motor (5) and a gear box (6) and further having front and rear ends.

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An aggregate dispensing system (12, 14, 34, 41) carried by the vehicle and further comprising:

A plurality of input hoppers (14, 20, 36) disposed proximate the front end of the vehicle, and adapted to receive aggregate material.

An output hopper (35) disposed proximate the rear end of the vehicle. The output hopper converging toward a discharge port, which is adapted to discharge aggregate material over the ground surface.

A plurality of conveyor mechanisms (12, 34) at least one conveyor extending between the input hopper (20) and the output hopper (35). The at least one conveyor (34) being adapted to transport aggregate material from an input hopper (20) to the output hopper (35).

An asphalt binder material dispensing system (43, 44, 52) carried by the vehicle (1) separate from the aggregated material system, such that asphalt binder material and the aggregate material are not mixed prior to the aggregate material being dispensed through the discharge port. The asphalt binder material dispensing system further comprising:

A plurality of tanks (43, 44, optionally 51) for holding asphaltic binder material.

A spray bar (52) disposed between the discharge port of the output hopper and the front end of the vehicle (1). The spray bar having a plurality of nozzles adapted to spray asphalt binder material.

Wherein all of the wheels roll on the ground surface between the spray bar and the front end of the vehicle, such that no wheels rollover the asphaltic binder material and aggregate material that are discharged by the spray bar and through the output hopper. What Bense et al. does not disclose is the use of a pump mechanism, adapted to pump asphaltic binder material from the tank to the spray bar. However, Bense et al. clearly describes the desirability for precise proportions of aggregate, binder and optionally a pulverant material. See col. 5, lines 17-40. As well as a desirability to provide a fast moving paving machine and only providing 5 seconds between the time the binder material is sprayed onto the surface and the screed plate/finishing table compacts the aggregate into the binder material. Therefore, it would have been obvious, if not inherent, that a gravity feed system would not provide the desired results and that a pump for pumping asphaltic binder materials from the tanks (43, 44, 51) to the spray bar, is the only means capable of consistently providing the desired results, in the time frame permitted. See col. 6, lines 46-col. 7, line 11.

In regards to Claims 6, 7 Bense et al. discloses a mechanical coupling (29, 30) at the front end of the vehicle, the mechanical coupling (29, 30) adapted to selectively attach and detach from a supply truck, which carries aggregate material for filling the input hopper (14). See col. 4, lines 61-67. Bense et al. further illustrates an auger, in Figs. 1, 3, disposed in the lower part of input hopper (14) and extending horizontally, transverse to the direction of travel, and further disposed above a front portion of a conveyor

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mechanism (12), proximate the front end of the vehicle (1). Although not specifically cited, it is inherent that the function of the cited auger is to spread out the aggregated material received from the supply truck, in order to increase the effective holding capacity of the input hopper.

In regards to Claims 13-14 Bense et al. discloses the spray bar is generally parallel to the discharge port of the output hopper and is spaced in front of the discharge port.

Although, Bense et al. does not disclose a specific spacing between the spray bar and the discharge port of the output hopper; Bense et al. does positively recite "the boom/spray bar (40)...and the zone/discharge port of the output hopper...and the finishing table/screed (42), are disposed close together, one after another, at the rear part of the machine...bearing in mind the speed of the machine(approximately 10-25 meters/minute)...and that no more than 5 seconds elapses between the spreading of the binding material on the surface (7) of the road...and the end of compacting and surfacing performed by the finishing table.

Hence, it is inherent, if not obvious, that the spray bar and the discharge port are spaced between .1 and 10 feet apart. See col. 8, lines 54-66.

In regards to claim 15 Bense et al. discloses a method of chip-sealing a roadway surface (7) with a roadway paving vehicle (1). The roadway paving vehicle having a front and rear end. Said method comprising:

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Storing a supply of asphalt binder material in a tank (43, 44, 51) on the vehicle (1).

Storing a supply of aggregate material in a hopper at the front end of the vehicle (1).

Transporting said binder material from the tank to a spray bar (40) at the rear end of the vehicle (1).

Transporting aggregate material from a input hopper to an output hopper (35) at the rear end of the roadway paving vehicle (1).

Spraying said binder material from the spray bar at a 1<sup>st</sup> span over the roadway surface, forming a layer of said binder material on the roadway surface (7).

Discharging aggregate material from the output hopper at a 2<sup>nd</sup> span over the layer of said binder material.

Preventing intermixing of asphalt binder material and aggregate material prior to discharging of aggregate material and spraying of said binder material.

In regards to Claims 23-25 Bense et al. further discloses the method steps of:

Supporting the entire vehicle (1) on wheels (2a-d), such that all the wheels are disposed in front of the spray bar and discharge port of the output hopper. Although, Bense et al. does not disclose a specific spacing between the spray bar and the discharge port of the output hopper; Bense et al. does positively recite "the boom/spray bar (40)...and the zone/discharge port of the output hopper...and the finishing table/screed (42), are disposed close together, one after another, at the rear part of the machine...bearing in mind the speed of the machine(approximately 10-25 meters/minute)...and that no more than 5 seconds elapses between the spreading of the binding material on the surface



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(7) of the road...and the end of compacting and surfacing performed by the finishing table. Hence, it is inherent, if not obvious, that the spray bar and the discharge port are spaced between .1 and 10 feet apart. See col. 8, lines 54-66.

In regards to Claim 38 Bense et al. discloses a method of chip-sealing a roadway surface (7) using a roadway paving vehicle having wheels, comprising the steps of:  
Spraying asphalt binder material from the roadway paving vehicle over a roadway surface (7) forming a layer of asphalt binder material on the roadway surface.  
Discharging aggregate material from the roadway paving vehicle over the layer of asphalt binder material.

Preventing intermixing of asphalt binder material and aggregate material prior to the application of aggregate material and spraying of asphalt binder material to the roadway surface (7)

Insuring that no wheels of the roadway paving vehicle roll over the asphalt binder material or aggregate material after they are discharged onto the roadway.

In regards to Claims 42, 44-46 Bense et al. further discloses the method steps of:  
Selectively controlling the spraying to set a 1<sup>st</sup> span of a 1<sup>st</sup> length over which asphaltic binder material is sprayed, and selectively controlling the discharging to set a 2<sup>nd</sup> span of a second length over which aggregate material is discharged, Supporting the entire vehicle (1) on wheels (2a-d), such that all the wheels are disposed in front of the spray

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bar and discharge port of the output hopper. Although, Bense et al. does not disclose a specific spacing between the spray bar and the discharge port of the output hopper; Bense et al. does positively recite "the boom/spray bar (40)...and the zone/discharge port of the output hopper...and the finishing table/screed (42), are disposed close together, one after another, at the rear part of the machine...bearing in mind the speed of the machine(approximately 10-25 meters/minute)...and that no more than 5 seconds elapses between the spreading of the binding material on the surface (7) of the road...and the end of compacting and surfacing performed by the finishing table. Hence, it is inherent, if not obvious, that the spray bar and the discharge port are spaced between .1 and 10 feet apart. See col. 8, lines 54-66.

In regards to Claim 60 Bense et al. discloses a roadway paving apparatus for applying asphalt binder material and aggregate material to a ground surface (7) comprising:

A vehicle having an engine and wheels, a front end and a rear end.

A aggregate material dispensing system carried by the vehicle (1). Said system being adapted to hold a supply of aggregate material and having a discharge port proximate the rear end of the vehicle, behind the wheels. The discharge port adapted to discharge aggregate material over the ground surface.

The aggregate material dispensing system including a conveyor mechanism (12, 34) extending substantially between front and rear ends for transporting aggregate material rearwardly toward the discharge port.

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An Asphalt binder material dispensing system (40, 43, 44, 51) carried by the vehicle separate from the aggregate material system, such that asphalt binder material and aggregate material are not mixed prior to aggregate material being dispensed through the discharge port. The asphalt binder material dispensing system adapted to hold a supply of asphalt binder material. The asphalt binder material dispensing system including:

A sprayer (40) having a width adjustable spray bar (52).

A plurality of nozzles.

The spray bar adapted to spray asphalt binder material through the nozzles behind the wheels and wherein all of the wheels roll on the ground surface between the spray bar and the front end such that no wheels roll over the asphalt binder material and aggregate material that are discharged by the spray bar the and through the discharge port.

In regards to Claims 61-63 Bense et al. discloses a plurality of input hoppers (14, 20) proximate the front end of the vehicle adapted to receive aggregate materials and an output hopper (35) disposed proximate the rear end of the vehicle, the output hopper converging toward a discharge port. Bense et al. further discloses the use of a plurality of binder holding-tanks (43, 44) connected to the spray bar (40). Although Bense et al. does not specifically recite the use of a pump mechanism; Bense et al. clearly describes the desirability for precise proportions of aggregate, binder and optionally a pulverant

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material. See col. 5, lines 17-40. As well as a desirability to provide a fast moving paving machine and only providing 5 seconds between the time the binder material is sprayed onto the surface and the screed plate/finishing table compacts the aggregate into the binder material. Therefore, it would have been obvious, if not inherent, that a gravity feed system would not provide the desired results and that a pump for pumping asphaltic binder materials from the tanks (43, 44, 51) to the spray bar, is the only means capable of consistently providing the desired results, in the time frame permitted.

See col. 6, lines 46-col. 7, line 11.

In regards to claims 66, 67 Bense et al. discloses a mechanical coupling (29, 30) at the front end of the vehicle, the mechanical coupling (29, 30) adapted to selectively attach and detach from a supply truck, which carries aggregate material for filling the input hopper (14). See col. 4, lines 61-67. Bense et al. further illustrates an auger, in Figs. 1, 3, disposed in the lower part of input hopper (14) and extending horizontally, transverse to the direction of travel, and further disposed above a front portion of a conveyor mechanism (12), proximate the front end of the vehicle (1). Although not specifically cited, it is inherent that the function of the cited auger is to spread out the aggregated material received from the supply truck, in order to increase the effective holding capacity of the input hopper.

***Claim Rejections - 35 USC § 103***

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4. Claims 3, 4, 16, 17, 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bense et al. in view of Murray # 5,000615.

Bense et al. discloses, or reasonably suggests, essentially all that is claimed, to include a pump mechanism disposed between a holding tank and a spray bar, as cited above, but does not disclose how the paving apparatus is supplied with a binder material to the asphalt binder material dispensing system having up to 3 holding tanks. However, Murray teaches system for relaying pavement, comprising: An asphalt paving apparatus (10) further comprising: An asphaltic binder material holding tank (64), an input pump (68) having an input conduit (70) for receiving binder material from a supply truck (16/14) and transporting said binder material to said holding tank (64), as well as an output pump (66) disposed between the holding tank (64) and an output device (52). Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the paving system of Bense et al. with a pump mechanism having both input and output pumps, as taught by Murray, in order to resupply the paving apparatus with a binder material.

In specific regard to Claim 4, as cited above, Bense et al. discloses a binding material dispensing system having a storage capacity of 12 tons, see col. 8, lines 40-47.

Murray discloses providing both input and output pumps (68, 66) for supplying the paving apparatus with a binder material. Therefore, it would have been obvious to one of ordinary skill in the art, to provide the paving apparatus of Bense et al. with a pump mechanism, as taught by Murray, in order to provide a 12 ton capacity binder

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dispensing system with a means to provide a uniform layer of binder onto a road surface. See Col. 3 of Murray; col. 6 of Bense et al.

In regards to Claims 16, 17 Bense et al. discloses the paving apparatus can be used in batch or continuous paving operations, and that a supply truck, can mobilize an aggregate material to an input hopper. Bense et al. does not disclose the method step of providing a supply truck to the paving apparatus for resupplying binder and aggregate materials. However, Murray teaches a paving method comprising the steps of:

Providing a supply truck (16) to a paving apparatus (10). Said supply truck further comprising a supply tank for supplying an asphaltic binder material, and storage bins (44, 46) for processing aggregate materials to be supplied to the paving apparatus (10). Said supply truck further having a live bottom conveyor (50) for transporting an aggregate material from the storage hopper, to a paving apparatus input hopper (52).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the method of paving a roadway of Bense et al. with the method step of providing a supply truck, as taught by Murray, in order to provide a means to perform continuous paving operations. See Murray Figs. 1A, 1B; col. 3, 4.

In regards to Claim 40 Bense et al. essentially all that is claimed, to include an automated control for controlling the transfer of binder and aggregate from a supply truck to the paving vehicle and an operators station, in the form of a control cab (10), located at the front of the paving vehicle. What Bense et al. does not specifically recite

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is providing the controls, for the automated transfer system, at an operator station.

However, it would be obvious to dispose the controls at the control cab (10), in order to allow the paving machine operator to have total control of all paving operations.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the method of paving a roadway of Bense et al., with controls at an operators station, as reasonably suggested by Bense et al. in order to provide the operator with means to match the flow rate of supplied materials to the flow rate of the dispensed materials.

See Bense et al. col. 2, lines 22-33.

In regards to Claim 41 Bense et al. discloses essentially all that is claimed, to include the method steps of: unlinking the roadway paving vehicle and a supply truck while continuing the spraying of asphalt binder material and discharging aggregate material.

What Bense et al. does not disclose is the method step of linking the paving vehicle with a 2<sup>nd</sup> supply truck. However, Murray teaches a method for paving roadways comprising the step of: Connecting a paving vehicle (10), repeatedly to a supply truck (16) for supplying paving materials to the paving machine such that the paving machine may be used in a continuous paving application. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the method of paving a roadway, of Bense et al. with the method step of providing a plurality of supply trucks, as taught by Murray, in order to utilize the paving machine in a continuous paving application.

4. Claims 5, 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bense et al. in view of Murray as applied to claims 4, 51 above, and further in view of Jenne et al. # 6,099,616.

Bense et al. in view of Murray discloses essentially all that is claimed, except for the use of a swivel joint in the input hose supplying the paving apparatus with binder material. However, Jenne et al. teaches a method for recovering vapors during dispensing of a bituminous product into a holding tank mounted to a vehicle. Said apparatus further comprising: An input conduit (18) having a swivel joint (46) for flexibility when positioning the input conduit. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the paving apparatus of Bense et al. in view of Murray, with an input hose having a swivel joint, as taught by Jenne et al., in order to provide flexibility in the conduit, when a paving apparatus is coupled to a supply truck.

5. Claims 8, 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bense et al. in view of Benedetti et al. # 4,765,772.

Bense et al. discloses essentially all that is claimed, except for the use of an input hopper having expansion wings. However, Benedetti et al. teaches an paving machine, consisting of a hopper (11) having expansion wings (13) at opposed sides of the input hopper. The expansion wings pivoting from a lower position wherein a 1<sup>st</sup> horizontal spacing is defined between the expansion wings to a raised transport position



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wherein a 2<sup>nd</sup> horizontal spacing is defined between the expansion wings, that is less than the 1<sup>st</sup> horizontal spacing. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the paving apparatus of Bense et al. with an input hopper having expansion wings, as taught by Benedetti et al. in order to provide a means to urge aggregates toward the center of the hopper. See Benedetti et al. col. 6, line 65-col. 7, line 14.

6. Claims 9, 21, 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bense et al. in view of Perrin et al. # 5,279,500.

Bense et al. discloses essentially all that is claimed, except for the use of valves to control flow of binder material to the spray bar. However, Perrin et al. teaches an apparatus for spreading a road surfacing material comprising: A spray bar (18) and a plurality of control valves (32) mounted to the spray bar (18, 19) and controlling flow of a bituminous binder to at least one nozzle by having open and closed states. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the paving apparatus of Bense et al., with a control valve means, as taught by Perrin et al., in order to provide a means to selectively activate the spray nozzles. See Perrin et al. col. 5-col. 6, line 33.

In regards to Claims 21, 69 Bense et al. discloses essentially all that is claimed, to include a width variable spray bar. Bense et al. does not disclose the use of control valves to actuate spraying of the binder material. However, Perrin et al. teaches a

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method for spreading a road surfacing material comprising: Providing a spray bar (18) and a plurality of control valves (32) mounted to the spray bar (18, 19) and controlling flow of a bituminous binder to at least one nozzle by having open and closed states.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the paving apparatus of Bense et al., with a control valve means, as taught by Perrin et al., in order to provide a means to selectively activate the spray nozzles. See Perrin et al. col. 5-col. 6, line 33.

7. Claims 10, 11, 12, 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bense et al., in view of Perrin et al., as applied to claim 9 above, and further in view of Hill # 5,234,128.

Bense et al. in view of Perrin et al. discloses essentially all that is claimed, to include 1<sup>st</sup> and 2<sup>nd</sup> endless belt conveyors, (see Bense et al. col. 4, lines 35-44) that extend diagonally and rearwardly as well as control means, such as a microprocessor, for controlling the flow of binder material to the spray bar. (See Perrin et al. col. 5, lines 34-col. 6, line 33. What Bense et al. in view of Perrin et al. does not disclose are the structural features of the output hopper. However, Hill teaches an aggregate material spreader comprising: A plurality of gates (14) dividing a discharge port (36). The gates having open and closed positions, for controlling the volume of aggregates discharged. The output hopper further having a chute (as seen in Fig. 1) for receiving an aggregate material from an upwardly and rearwardly disposed conveyor mechanism, and a control unit (51) to control speed of the conveyor mechanism and opening and closing of the

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gates (14). Said hopper (10) having expansion bins (11, 12, 13), controlled by additional gates (14), for varying the width of aggregates spread onto the roadway. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the apparatus of Bense et al. in view of Perrin et al., with an aggregate dispensing system, as taught by Hill, in order to provide a means to vary the application area of the aggregates being spread. See Hill Col. 4, lines 40-col. 6, line 39.

In regards to Claims 12, Bense et al. discloses a width adjustable spray bar (52). See col. 8, lines 33-35.

8. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bense et al. in view of Hill # 5,234,128.

Bense et al. discloses essentially all that is claimed, to include the use of a variable width spray bar (52) for varying the 1<sup>st</sup> span, over which the asphaltic binder material being sprayed. What Bense et al. does not disclose is the varying the 2<sup>nd</sup> span over which the aggregate is discharged. However, Hill teaches an aggregate material spreader having an adjustable hopper and a plurality of gates. Hill further teaches the method step of varying the span over which an aggregate is discharged by the variable width hopper, in order to cover an entire roadway or just a portion thereof, with an aggregate. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the method of paving a roadway of

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Bense et al. with the method of varying the span over which an aggregate is spread, as taught by Hill, in order to accommodate varying roadway widths. See Hill col. 4-5.

9. Claims 64, 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bense et al. in view of Kilheffer et al. Bense et al. discloses essentially all that is claimed, except for the provision of providing means to resupply the paving machine with paving materials. However, Kilheffer et al. teaches a paving system comprising: A refill means (70) further comprising a plurality of input hoses, pumps and different mechanical devices to connect an asphalt dispensing system to a supply. Kilheffer et al. further discloses it is desirable to provide an asphalt pump (68) on the output end of the storage tank, for controlling the pressure of an emulsion being removed from the tank (68). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the paving apparatus of Bense et al., with resupply means, as taught by Kilheffer et al., in order to provide a means to perform continuous paving operations.

10. Claims 47-51, 53, 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Brien et al. # 5,895,173 in view of Kilheffer et al. # 5,590,976.

O'Brien et al. discloses a roadway paving system for chip sealing a roadway surface comprising:

A roadway paving vehicle (20) further comprising:

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An asphalt binder material dispensing system further comprising: An asphalt tank (not shown, see col. 5, lines 30-50), A sprayer (40).

An aggregate material dispensing system holding a supply of aggregate material and able to discharge a layer of aggregate over a roadway surface, over top of the binder layer previously applied. Said aggregate dispensing system and binder dispensing system being separate such that the binder material and the aggregate is not mixed prior to the aggregate being dispensed.

What O'Brien et al. does not disclose is connecting the paving machine to a supply truck for receiving additional asphalt binder and aggregate materials. However, Kilheffer et al. teaches mobile paving system comprising: a paving vehicle (10) having a plurality of aggregate hoppers (12, 14) and a plurality of binder material storage tanks (18, 20). Kilheffer et al. further teaches the desirability to provide means (70) to receive additional paving materials from a plurality of supply trucks. Said means (70) further comprising: A link (70), such as a transfer conduit between a 1<sup>st</sup> supply truck and the paving vehicle (10), and wherein the aggregate material is transferred from a supply hopper to the aggregate dispensing system. Further wherein, the asphalt tank and aggregate material dispensing system have a sufficient holding capacity such that said 1<sup>st</sup> supply truck and be unlinked from the roadway paving vehicle and a 2<sup>nd</sup> one of the supply trucks may be linked to the roadway paving vehicle with continuous application of asphalt binder material and aggregate material without stopping the roadway paving vehicle. See 3, lines 40-45, 5, line 49-col. 6, line 12. Therefore, it would have been obvious to one of ordinary skill in the art, to provide the paving apparatus of O'Brien,

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with a refill system, as taught by Kilheffer et al., in order to perform continuous paving operations; as reasonably suggested by O'Brien, see col. 4, lines 55-63.

In regards to Claims 48-50 O'Brien discloses essentially all that is claimed, to include: A sprayer, comprising at least 1 spray bar (40) having a plurality of nozzles (41, 42), a plurality of wheels (60) for support, and being disposed in front of the spray bar and discharge chute (32), such that no wheels roll over asphalt or aggregate that have been applied to the roadway surface. O'Brien further discloses an output hopper (30) having a discharge chute (34), a conveyor mechanism extending between a supply of aggregate and the output hopper (30). What O'Brien does not disclose are the structural features of the vehicle (not shown), that provide aggregate and binder material to the paving apparatus (20). However, O'Brien does positively recite "apparatus (20) either forms a part of a self-propelled carrier vehicle (not shown) or is towed by a separate vehicle (also not shown)". Further, Kilheffer et al. teaches a mobile paving system comprising a self-propelled vehicle (20) comprising:

An input hopper (12) an output hopper (24) both having a discharge port, and conveyor system (22, 23, 28) transporting aggregate material between said input and output hoppers. Kilheffer et al. further teaches a variable speed displacement pump (64), disposed between said storage tanks (18, 20) and a discharge port. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the paving apparatus of O'Brien, with an input hopper and asphalt pump, as

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taught by Kilheffer et al., in order to perform a continuous paving operation. See col. 3, col. 4, lines 20-37, col. 5, lines 38-43.

In regards to Claims 51, 53, 55 O'Brien discloses providing the spraying of the binder material and the discharge of the aggregate material are spacedly, adjacent one another, as illustrated in Fig. 2. O'Brien does not disclose the specifics of the carrier vehicle further comprising the paving apparatus. However, Kilheffer teaches a paving system having an operators' station, an input conduit (70) fluidically connected to the transfer conduit through a detachable hydraulic coupling. See Col. 5, lines 49-61.

Kilheffer et al. further teaches paving the roadway within a ground speed range of ½-3 mph. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the paving apparatus of O'Brien with a carrier vehicle capable of being refilled by supply trucks, while paving operations continue between ½ and 3 mph, as taught by Kilheffer et al., in order to perform continuous paving operations.

11. Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Brien in view of Kilheffer et al., as applied to claim 51 above, and further in view of Jenne et al. # 6,099,616.

O'Brien in view of Kilheffer et al. discloses essentially all that is claimed, to include the use of a refill apparatus comprising a plurality of hoses and other mechanical devices for fluidly connecting a supply truck to said asphalt dispensing system; but does not

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disclose the use of a swivel joint in the input hose supplying the paving apparatus with binder material. However, Jenne et al. teaches a method for recovering vapors during dispensing of a bituminous product into a holding tank mounted to a vehicle. Said apparatus further comprising: An input conduit (18) having a swivel joint (46) for flexibility when positioning the input conduit. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the paving apparatus of O'Brien in view of Kilheffer et al., with an input hose having a swivel joint, as taught by Jenne et al., in order to provide flexibility in the conduit, when a paving apparatus is coupled to a supply truck.

#### ***Allowable Subject Matter***

12. Claims 18-20, 22, 56-59 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Adams # 971,338 discloses a aggregate distributor. Brock et al. # 4,818,139 discloses an asphalt-aggregate paving apparatus. Ulrich et al. # 5,735,634 discloses a road finisher and method of applying surface layers. Wirtgen # 5,741,085 discloses a paving apparatus. Banks et al. # 6,079,901 discloses a paving machine.



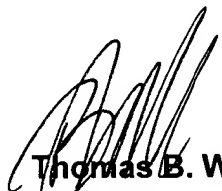
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Capece # 6,345,931 B1 discloses an aggregate material spreader. EP 0442593 A1 discloses a paving system for continuous paving operations.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Addie whose telephone number is (703) 305-0135. The examiner can normally be reached on Monday-Friday from 8:00 am to 2:00 pm, 6-8 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will, can be reached on (703) 308-3870. The fax phone number for this Group is (703) 305-8623.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1113.



**Thomas B. Will**  
Supervisory Patent Examiner  
Group 3600

**RWA**  
**7/29/2002**